The Influence of General Sustainability Attitudes and Value Congruence on Consumer Behavior

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ABSTRACT

Sustainability has become a strategic focus within many modern organizations. This is largely attributed to increased public awareness and changes in consumer behavior. One recent trend, 'ethical consumerism (EC),' occurs when consumers purchase the goods and services from businesses that share their values. In response, many businesses are adopting 'cause-related marketing (CRM)' campaigns to attract and retain customers who regularly engage in EC. Sustainability reporting has been identified as method of CRM capable of attracting and retaining consumers who value sustainability. To investigate this phenomenon we conducted a lab experiment designed to measure consumer behavior (loyalty and purchase intentions) based on the alignment of individual consumer values and organizational values (value congruence). The results of our study suggest (a) general attitudes toward sustainability (GATS) positively and significantly influence value congruence (VC), and (b) VC positively and significantly influences consumer behavior (loyalty and purchase intention).

Keywords

Sustainability, Sustainability Reports, Value Congruence, Consumer Loyalty, Purchase Intention

INTRODUCTION

Sustainability has become a strategic focus within many modern organizations. This is attributed to changes in public awareness and consumer behavior. The increase in media coverage of environmental issues and changes in general consumer behavior patterns have given rise to what is known within the research literature as 'ethical consumption' and 'ethical consumerism' (Newholm and Shaw, 2007; Strong, 1996). That is, consumers are purchasing goods and services from businesses that share their values. Organizations have responded to ethical consumerism with 'cause-related marketing' (CRM) to attract conscientious consumers (Barone, Miyazaki and Taylor, 2000). Recent studies including surveys by McKinsey & Company, the United Nations Global Compact led by Accenture, and the Boston Consulting Group indicate "strengthening reputation and trust are prime motivators for companies to be involved with sustainability (O'Brien, 2010)." Sustainability reporting is emerging as an effective method of CRM capable of attracting and retaining patrons.

To better understand the impact of an organization's commitment to sustainability on consumer behavior we conducted a lab experiment designed to address three basic research questions; (a) 'Does an individual's general attitude toward sustainability affect value congruence (VC) with businesses that publish sustainability reports?', (b) 'Will VC positively influence consumer loyalty (CL) and consumer purchase intentions (CPI)?', and (c) 'Will CL positively affect CPI?'

THEORETICAL BACKGROUND

One of the earliest definitions of sustainability can be traced to a 1987 United Nations conference where sustainability is defined as developments that "meet present needs without compromising the ability of future generations to meet their needs (WCED, 1987)." For the purposes of this study we closely adhere to the United Nations definition of sustainability, and further define 'sustainability reporting' as documentation of an organization's focus on environmental issues as a central component of normal business operations. These business operations include waste reduction, eliminating pollution,

recycling & the use of materials that are easily recycled, utilizing energy efficient operations, the use of green power (solar, wind, hydro, etc.), and supporting non-profit environmental organizations and initiatives.

Based on previously published literature we use two constructs to measure consumer behavior (CL and CPI), VC to measure the level of alignment between individual values and the values of a business organization, and one construct to measure general attitudes toward sustainability (GATS).

Consumer Purchase Intentions (CPI)

Taylor and Strutton's (2010) meta-analysis of 112 Internet related marketing studies found several commonalities related to constructs used to measure consumer behavior. Behavioral intention or 'purchase intention' was included in almost all studies in Taylor and Strutton's meta-analysis. Behavioral intention is based on several widely accepted theories including the theory of reasoned action (Fishbein and Ajzen, 1975), the theory of planned behavior (Ajzen, 1991), the technology acceptance model (Davis, 1989), and flow theory (Csikszentmihalyi, 1988; Hoffman and Novak, 1996). Given its extensive use within consumer behavior research PI was adopted as a measure of consumer behavior. For the purpose of this study CPI is defined as consumers' intention to purchase specific products or services from a particular vendor.

Consumer Loyalty (CL)

CL is considered a post-purchase attitude. Taylor, Strutton (2010) define CL as a consumers' favorable attitudes toward a business resulting in repeat business or 're-purchase intentions.' This has implications for continuing patronage of company's products or services in the future. As such CL was adopted as a measure of consumer behavior to better understand how re-purchase intentions influence CPI. Therefore we hypothesize:

Hypothesis 1: "Consumer Loyalty will have a significant, positive effect on consumer purchase intentions."

Value Congruence (VC)

Values are referred to as desirable states, objects, goals or behaviors, transcending specific situations and applied as normative standards to judge and to choose among alternative modes of behavior (Elizur and Sagie, 1999). Examples of values include but are not limited to equal rights in the workforce, ecological diversity, and environmental stewardship. Cazier, Shao, and St Louis (2007) define VC as "the amount of overlap between a consumer's personal values and the values he perceives to exist in an organization." Again, ethical consumerism refers to conscientious consumers' who purchase goods and services from businesses that share their values.

Cazier et al. (2007) explain an organization can be described as (a) Value Neutral (an organization's values are perceived not to provide any meaningful support either for or against the causes an individual is interested in), (b) Value Positive (an organization is perceived to have high compatibility between the individual's values and the organization values), and (c) Value Negative (an organization's values and an individual's values are perceived to be negatively correlated). We expect participants to report a higher correlation or VC with a business organization that uses sustainability reporting as a method of CRM.

Hypothesis 2: "Value Congruence will have a significant, positive effect on consumer purchase intentions."

Hypothesis 3: "Value Congruence will have a significant, positive effect on consumer loyalty."

General Attitudes toward Sustainability (GATS)

VC measures the level of value alignment between an individual consumer and a business organization. We will later describe the fictional IT business and its sustainability report presented to participants during the lab experiment developed for this study. However, to better understand the impact of pre-exiting general attitudes toward sustainability and their effect on CV we adopted a measure of GATS used to collect data prior to beginning the lab experiment. For purposes of this study we have defined GATS as "an individual's general attitude toward sustainability and the environment."(Johnsson, 2007). Therefore, we hypothesize:

Hypothesis 4: "An individual's general attitudes toward sustainability will have a significant, positive effect on value congruence."

Summary of Hypotheses

Hypothesis	Symbol	Description
H1	CL → CPI	Consumer loyalty will have a significant, positive effect on consumer purchase intentions
H2	VG → CPI	Value Congruence will have a significant, positive effect on consumer purchase intentions.
H3	VG → CL	Value congruence will have a significant, positive effect on consumer loyalty
H4	GATS → VG	General attitudes toward sustainability will have a significant, positive effect on value congruence

Table 1. Summary of Hypotheses

Research Model

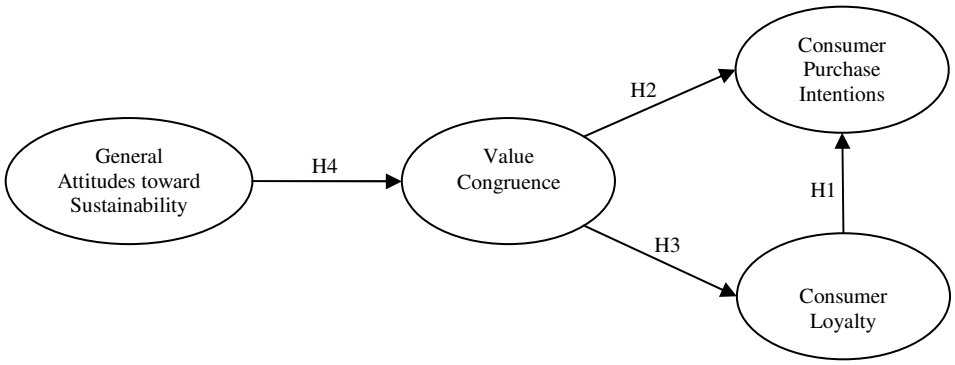

Figure 1. Research Model

RESEARCH METHODS

Participants

The use of students as surrogates in social science research is a controversial issue and has often been debated within the IS research literature. Burnette, Dunne (1986) suggest that students should only be used as subjects when they represent the subject of interest. Bass, Firestone (1980) note that research findings which are not widely generalizable beyond a specific population can provide evidence of causal relationships and testable hypotheses that can be extended to other subject populations. Despite the controversy, previous social science research seems to indicate it is suitable to use students as surrogates when the participants' skills and experiences are considered appropriate for an experimental task (Chi and Glaser, 1985; Hughes and Gibson, 1991). It has been noted that university students represent one of the largest target markets for MP3 players and digital downloads of both music and movies (Ipsos_Research, 2006). Therefore, undergraduate students were recruited as participants for this study. Since participants are asked to behave in their normal capacity, the use of students is considered appropriate (Gordon, Slade and Schmitt, 2002).

A total of 363 participants (61.2% males and 38.8% females) with an average age of 23.3 years (age range from 18 to 50) completed the research study.

Procedure

In order to test our proposed hypotheses, we conducted an online lab experiment. During the lab experiment a fictitious company was presented to help control for possible bias during data collection. For example, if Amazon.com were

incorporated into the lab experiment participants who have purchased goods or services from Amazon.com might rely on previous experience to answer consumer behavior questions rather than information provided during the experiment. Therefore, we created a fictional company — a manufacturer and retailer of digital media players and seller of downloadable digital songs and movies. There are several established companies that bear resemblance to aspects of our company's business including Apple (iPod and iTunes), Microsoft (Zune), and Amazon (digital downloads).

In step one of the lab experiment demographic information and data used to measure GATS were collected. In step two the basic facts provided to our participants stated that the company was founded in 2001, it has over $100 million a year in sales, consumers consistently rate its products very high, and its products are reasonably priced. Participants were also told that they were looking for a gift for a close friend, and they have decided to buy an MP3 player along with a downloaded song and a downloaded movie as a gift.

In step three participants were given additional information about Media Magic's sustainability report. The summary of the sustainability report notes that Media Magic supports the environment and gives back to local communities by (a) avoiding the use of toxic elements in its products, (b) supplementing its energy needs with renewable power, (c) promoting an initiative to be "good stewards" of the environment as the central mission of the company, and (d) the company donates a set percentage of profit from each MP3 player sold to various environmental organizations.

In step four of the lab experiment consumer behavior data were collected. This included data collected to measure CL and CPI. The experimental procedure is summarized in Figure 2.

Experimental Procedure

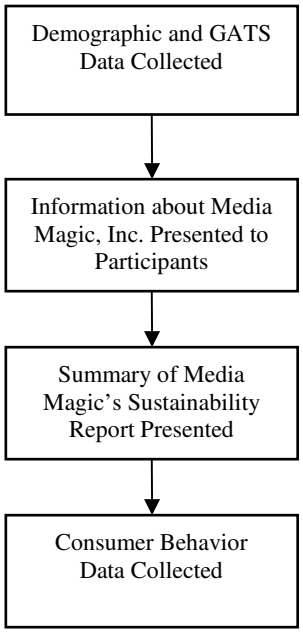

Figure 2. Steps in Lab Experiment Procedure

Measures

Survey items were used to measure general attitudes toward sustainability, value congruence, and consumer behavior (loyalty and purchase intentions).

Consumer Purchase Intention (CPI)

The consumer behavior construct, CPI, was measured using four Likert-type questions. Participants were asked to rate their level of agreement with each statement on a scale of one to seven. For example, 'It is _____ I will buy these items from The Company rather than a competitor' (1 = Likely, 7 = Unlikely).

Consumer Loyalty (CL)

The consumer behavior construct, CL, was also measured using four Likert-type questions. Participants were asked to rate their level of agreement with each statement on a scale of one to seven. For example, 'I would _____ to buy from The Company.' (1 = Prefer To, 7 = Prefer Not To). These four items were also adopted from previously published studies (Cazier, 2006; Cazier, Shao and St Louis, 2006; Cazier et al., 2007).

Value Congruence (VC)

VC was measured using four Likert-type questions adopted from prior research studies (Cazier, 2006; Cazier et al., 2006; Cazier et al., 2007). Participants were asked to rate their level of agreement with each statement on a scale of one to seven. For example, 'Media Magic's environmental values appear to be ___ with my own.' (1 = Very Strongly Congruent, 7 = Very Strongly Incongruent).

General Attitudes toward Sustainability (GATS)

GATS were measured using four Likert-type questions adapted from prior research studies conducted by the Alliance for Global Sustainability (Johnsson, 2007). Participants were asked to rate their level of agreement with each statement on a scale of one to seven. For example, 'We should ____ the environment.' (1 = Very Strongly Protect, 7 = Very Strongly Exploit).

DATA ANALYSIS

Research Methodology

Partial least squares (PLS) (Chin, 1998; Tenenhaus, Vinzi, Chatelin and Lauro, 2005; Wold, 1975) a variance-based structural equation modeling (SEM) analysis technique (Bollen, 1989; Kaplan, 2000) was used as the data analysis method this study. PLS, an alternative to historically predominant covariance-based methods (Haenlein and Kaplan, 2004), focuses on maximizing the variance of the dependent variables explained by the independent variables instead of reproducing the empirical covariance matrix. PLS has an advantage in that it "involves no assumptions about the population or scale of measurement" (Fornell and Bookstein, 1982, p. 443) or distributional assumptions (Chin, 1998; Fornell and Cha, 1994). The PLS technique has become a widely used alternative to the covariance-based SEM technique and can either be applied for theory confirmation or theory development (Chin, 1998; Chin and Todd, 1995; Hair, Black, Babin, Anderson and Tatham, 2006). PLS has been applied across a wide range of studies in the information systems literature, including: (Compeau and Higgins, 1995; Hwang, 2005; Karimi, Somers and Gupta, 2004; Pavlou and Dimoka, 2006; Rivard and Huff, 1988; Wixom and Watson, 2001), among others. In fact, (Goodhue, Lewis and Thompson, 2006) suggest that "…PLS has been wholeheartedly accepted as an important statistical method in the MIS field" (p. 2). SmartPLS 2.0 (Ringle, Wende and Will, 2005) with the bootstrap re-sampling method (200 re-samples) was used to test the measurement and structural models.

Measurement Model

Consistent with established practice, PLS was used to specify the measurement model before evaluating the structural model (Bagozzi, 1994). Each construct and item was examined using PLS confirmatory factor analysis (CFA) in order to establish validity and reliability of the measurement model. Item reliability was evaluated by examining the item loadings, or the correlation between each item and its specific construct (Fornell, Lorange and Roos, 1990). While there is no definitive rule regarding minimal factor loadings in PLS, a value of 0.70 has been acknowledged as an acceptable retention threshold (George and Mallery, 2003; Hulland, 1999) and was adopted in the current study. As seen in Table 2, loadings on specified factors were well above the .70 minimum threshold. Ideally variables load significantly on a single factor that has a communality measure greater than 0.50. Communality represents the total amount of variance the specific variable shares with all other variables included in the factor analysis. Thus, communality values less than 0.50 do not provide adequate explanatory value.

CONSTRUCTS	GATS	CL	CPI	VC
Communality	0.7869	0.7271	0.7841	0.8756
ITEMS				
GATS1	0.9120	0.0286	0.1346	0.4258
GATS 2	0.8460	0.0033	0.1284	0.3786
GATS 3	0.8934	0.0887	0.1259	0.4281
GATS 4	0.8955	0.0453	0.1468	0.4518
CL1	0.0125	0.8549	0.3858	0.2877
CL2	0.0168	0.7914	0.4198	0.2754
CL3	0.0723	0.8724	0.4010	0.3292
CL4	0.0579	0.8888	0.4763	0.3215
CPI1	0.1126	0.4476	0.9296	0.3631
CPI2	0.1602	0.4417	0.8876	0.3324
CPI3	0.1964	0.4465	0.9216	0.3090
CPI4	0.0611	0.4191	0.7971	0.2553
VC1	0.4362	0.3443	0.3754	0.9038
VC2	0.4666	0.3588	0.3315	0.9428
VC3	0.4357	0.3191	0.3125	0.9513
VC4	0.4411	0.3095	0.3151	0.9443

Table 2. Cross-Loadings and Construct Communality

As seen in Table 2, items loaded well above the .70 threshold on their specific constructs. Some items do cross-load at slightly above .40 on unspecified constructs. It has been suggested that items cross-loading at .40 or greater on unassociated constructs be given closer scrutiny (Hair et al., 2006). However, each construct exhibits strong communality values and the maximum cross-loading on any unspecified construct was .4763. Therefore, items in the current study were retained if: (a) communality values were above the minimum acceptable threshold of 0.50 (b) factor loadings were above the minimum acceptable threshold of .70 on specified factors, and cross-loadings were below .50 (George and Mallery, 2003; Hulland, 1999; Wixom and Watson, 2001).

Construct Validity

Construct validity was evaluated through measures of convergent and discriminant validity. Convergent validity, or evidence that items converge that are associated a specific construct, was examined through calculations of Cronbach's alpha, composite reliability, and communality coefficients (Fornell and Larcker, 1981; Hulland, 1999). This study relied upon the recommended minimum Cronbach's alpha and composite reliability thresholds of 0.70 (George and Mallery, 2003; Nunnally and Bernstein, 1994; Wixom and Watson, 2001). Cronbach's alpha implicitly assumes that each item carries the same weight. However, composite reliability relies on the actual loadings to construct the factor score and thus may be a better measure of internal consistency (Chin, Marcolin and Newsted, 1996; Wixom and Watson, 2001). Again, communality measures greater than 0.50 show adequate explanatory power of the construct. As seen in Table 3, Cronbach's α, composite reliability, and communality of each construct was well above the minimum specified threshold.

Construct	Cronbach's α	Composite Reliability	Communality
GATS	0.9096	0.9365	0.7869
CL	0.8742	0.9141	0.7271
CPI	0.9069	0.9354	0.7841
VC	0.9525	0.9657	0.8756

Table 3. Convergent Construct Validity

Discriminant Validity

Discriminant validity, the extent to which two constructs are distinct, was assessed using the squared average variance extracted (AVE) procedure (Fornell and Larcker, 1981). The AVE is the "average variance shared between a construct and its measures…This measure should be greater than the variance shared between the construct and the other constructs in the model" (Hulland, 1999, p. 200). Table 4 provides the results of this test of discriminant validity. As recommended by the literature, the on-diagonal values (the square roots of the AVEs) reflect values above the minimum threshold of .50 and are greater that their respective off-diagonal values, indicating acceptable discriminant validity in this model.

	GATS	CL	CPI	VC
GATS	**0.8871**	0.0000	0.0000	0.0000
CL	0.0481	**0.8527**	0.0000	0.0000
CPI	0.1512	0.4955	**0.8855**	0.0000
VC	0.4760	0.3568	0.3575	**0.9357**

Table 4. Latent Variable Correlations with Square Root of AVEs on Diagonal

Structural Model and Hypothesis Testing

The structural model was tested by estimating structural path coefficients and corresponding t-statistics. Bootstrapping with a 200 re-sampling with replacement technique was used to estimate standard errors, sample mean, and path significance (Efron and Gong, 1983). It has been suggested that path coefficients of 0.20 or greater provide adequate explanatory power (Chin, 1998). The path coefficients provided in Table 5 show all hypothesized relationships in our theoretical model were supported, with all structural paths exhibiting very good explanatory power and significant at $p<.01$.

Hypothesis	Symbol	Structural Path Coefficients / (T-Statistics)	Description	Hypothesis Supported?
H1	CL → CPI	.422 (10.644)	Consumer loyalty will have a significant, positive effect on consumer purchase intentions	YES
H2	VG → CPI	.207 (4.022)	Value Congruence will have a significant, positive effect on consumer purchase intentions.	YES
H3	VG → CL	.357 (6.020)	Value congruence will have a significant, positive effect on consumer loyalty	YES
H4	GATS → VG	.476 (9.927)	General attitudes toward sustainability will have a significant, positive effect on value congruence	YES

Table 5. Summary of Hypotheses

Model Fit

Unlike covariance-based SEM, PLS models are not evaluated using traditional measures of model fit indices. Instead, goodness of fit for PLS models is assessed using the strength of path coefficients and R2 variance explained (Chin, 1995; Chin, 1998). In the current study, model fit was evaluated using the R2 for dependent constructs (Chin, 1998; Wold, 1982). As indicated in Table 5 and Figure 3, structural paths in our theoretical model were quite strong. Additionally, R2 value for VC is .227, indicating that GATS explain approximately 23% of the variance in this construct. R2 for CL is .127, indicating that VC explains approximately 13% of the variance in this construct. R2 value for CPI is .283, or indicating that VC and CL together explain approximately 28% variance in this construct. Extant literature provides little guidance regarding thresholds

for R2, since "meaningfulness is specific to a given research area" and can vary significantly between researchers, domains and phenomenon (Pedhazur, 1982, p. 25). Cohen (1992) suggests that given certain considerations, an R2 as small as 0.0196 may provide valuable information.

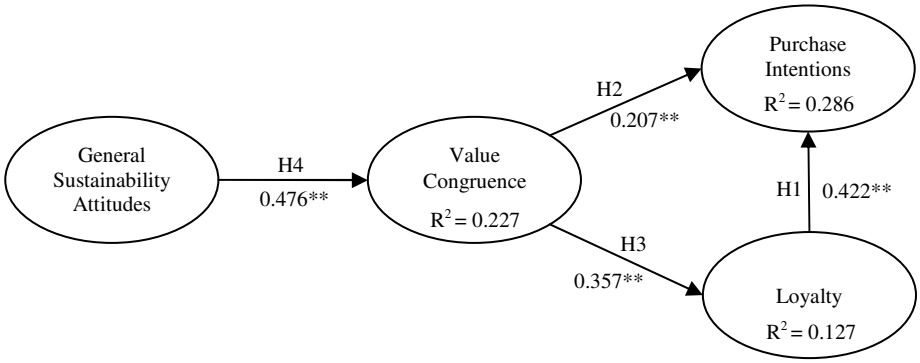

Figure 3. Results of PLS Analysis

In summary, the theoretical model in this study is well-supported and has been evaluated and validated through a number of well-vetted processes. First, steps were taken to ensure an appropriate measurement model. Item loadings on their specified constructs were evaluated based on minimum threshold of 0.70 (Hulland, 1999) and communality threshold of .50 (Hair et al., 2006). Convergent validity was demonstrated using Cronbach's alpha, composite reliability, and communality measures (Fornell and Larcker, 1981). Discriminant validity was demonstrated using the squared AVE approach (Fornell and Larcker, 1981), with squared AVE's being above .50 and well above cross-loadings on latent constructs. The model fit was determined through strong path coefficients significant at $p<.01$, supporting all hypothesized theoretical relationships between the constructs and through R2, or the amount of variance explained in endogenous constructs by their associated exogenous constructs.

CONCLUSION

The results of our study provide evidence that as the level of general attitudes toward sustainability increases the level of value congruence between an individual and a business organization with a published sustainability report also increases. Our findings also suggest increases in value congruence will lead to increases consumer loyalty as well as direct and indirect (through consumer loyalty) increases in consumer purchase intentions. Simply stated, consumers who value sustainability and environmental causes tend to purchase digital products from information technology business that strongly support sustainability and environmental causes. Therefore, sustainability reporting is an effective method of implementing cause-related marketing to attract and retain conscientious consumers of digital products and service.

Future Research

There are a number of opportunities to further explore the subject matter of this study. First, while consumer purchase intentions are a reliable predictor of actual behavior it would be advantageous to collect data on actual observed behavior (consumer purchases). Student data were deemed appropriate for this study given their age category represents the largest group of consumers of digital media. However, collecting data from consumers of digital media who are actual patrons of IT businesses offering digital media products and services would be ideal.

Future research could also investigate the effect of sustainability reporting on consumer behavior including whether or not the sustainability reports verified by a reputable third party auditing firm are more effective than an organizations' self-generated sustainability reports.

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